

METHOD FOR MANUFACTURING GATE SPACER FOR SELF-ALIGNED CONTACT

ABSTRACT OF THE DISCLOSURE

5 A method for manufacturing a gate spacer for self-aligned contacts is provided. A gate stack is formed on a semiconductor substrate. A conformal dielectric layer is then formed over the gate stack. An etch-stop material layer, e.g., a photoresist layer, is formed over the conformal dielectric layer. Next, an upper portion of the etch stop material layer is removed to expose an upper portion of the conformal dielectric layer by techniques such as
10 etching back. Subsequently, the exposed conformal dielectric layer is etched back using the remaining etch-stop material layer as an etch stopper. The remaining etch-stop material layer is removed and the etched-back conformal dielectric layer is again etched back to form a gate spacer.